REVIEWS.

ART. XII.—*The Treatment of Vaginal Fistula.*

1. *On the Treatment of Vesico-Vaginal Fistula.* By J. MARION SIMS, M. D., of Montgomery, Ala. (With twenty-two wood-cuts), pp. 24. From the *American Journal of the Medical Sciences* for Jan. 1852.
2. *Remarks on Vesico-Vaginal Fistule, with an account of Seven Successful Operations.* By N. BOZEMAN, M. D., of Montgomery, Ala. (With wood-cuts), pp. 29. From the *Louisville Review* for May, 1856.
3. *Urethro-Vaginal and Vesico-Vaginal Fistules—Remarks upon their Peculiarities and Complications, &c. &c.* By the same author. (With seventeen wood-cuts), pp. 23. From the *North American Medico-Chirurgical Review* for July, 1857.
4. *The History and Treatment of Vesico-Vaginal Fistula; a Report read before the Medical Society of the State of Georgia.* By P. M. KOLLOCK, M. D., Professor of Obstetrics in the Savannah Medical College. (With nine wood-cuts), pp. 32. Augusta, 1857.

NONE can have failed to notice the remarkable advance made of late by Obstetric Surgery. Within the century this department, aside from midwifery proper, itself then thought almost beneath contempt, was utterly unacknowledged by the profession. Now, on the contrary—though the legitimacy of its every operation, its every means of diagnosis, instrumental or manipulative, and of treatment, ligature, knife, suture, escharotic, compress, injection, are warmly—at times bitterly—contested—it has taken its place as an independent branch, distinct from General Surgery.

In this matter, as in others, general practitioners have been slow to acknowledge the claims of those who, by ill health, abundant worldly means, or ambition, have been enabled or compelled to devote themselves especially to it; although to such subdivision of labour (like that obtaining among lawyers and naturalists), as adopted and practised by physicians of honour, good education, and general experience, all our large communities are fast and willingly and advantageously tending. Impartial conservatism however, nor unfair opposition can longer withhold from obstetric surgery, unconfounded and ununited with midwifery, its honours as both science and art. Of all the triumphs, early and late, of this department, none excel, as few indeed of general surgery can equal, that which we are now briefly to discuss.

The rational, or at least the successful treatment of vesical fistulæ in women, dates back hardly ten years—up to which period many, probably most cases were pronounced, even by the best surgeons, incurable; cures where luck gave them, being gotten only by often repeated trial; while now "the surgeon can approach them with a confidence of success before unknown." We need not wonder that with the first approximation to this result was laid at once the foundation of an individual's world-wide fame, and of the Woman's Hospital of New York; well is it when, with so much public benefit, there is found a private one at all corresponding.

That these improvements are not overrated might easily be shown by quoting opinions most authoritative at their time :—

"If the opening is large, close it with a double stitch (the edges of the wound having been refreshed), keeping the flexible catheter in the bladder until it is entirely filled up. I wish this operation may not be found impracticable."[1] (Smellie, 1766.)

Mr. Liston (1828) publicly said :—

"It was seldom that union took place. All, indeed, might appear to go on well for eight or ten days; but at the expiration of that time the wound probably would be found to have been enlarged by having been interfered with, and would become larger and larger every time the attempt at cure was made."[2]
"When the communication is to a large extent, but little hope remains to the patient."
"In the majority of cases I fear we shall find but little benefit." "Indeed, vesico-vaginal fistula has long been considered as one of the *opprobria* of surgery, and, with some exceptions of late years, the cure has been given up as hopeless."[3] (Churchill, 1844.)

Of such assertions, many more could be given; but there is no need. They prove that the lesion was thought till of late almost absolutely and necessarily incurable. Even at the present day, professed and standard surgical text-books may be found, which pass over this "most distressing and intolerable accident to which females are subject" in silence.

Urinary fistulæ in the female, whether affecting the urethra or bladder, whether involving the vagina merely or the cervix uteri, and whether single or not, have presented to treatment an almost endless succession of obstacles, among which the difficulties of preliminary exploration and of operation were not alone; in the hands of the best surgeons and nurses, ligatures would cut and slough away, or urine would come dribbling through between them.

We shall follow these obstacles one by one, seeing how they have been successively met and overcome, rather than take up chronologically the various operations that have been proposed.

Preliminary Exploration.—It might be supposed that to ascertain the existence of a vesical fistula, is a matter very readily accomplished; this is not, however, the case. Far less is it easy, in many instances, to diagnose the size, position, and exact relations of the aperture in question, even when its existence is beyond all doubt. We were once called upon to operate for fistula, diagnosed as such by one of the first obstetricians now living in this country. On examination, the vagina was found large, unbridled, presenting none of the difficulties shortly to be considered, yet there was no fistula. The case was one of chronic and intermittent incontinence of urine, of many months' standing, undoubtedly identical in origin with the temporary form not uncommon immediately after delivery. Such a mistake might readily be made on casual or imperfect examination. In a vagina large, wrinkled, flabby, reeking with leucorrhea, and perhaps heated by chronic vaginitis, a stream of urine trickling upon the finger from a relaxed meatus might well give the idea of an abnormal passage, especially if that idea had already been entertained from the patient's description.

But it is as regards the character of an existing orifice, that most difficulties have been found. There are frequently contractions of the vagina, cicatrices, bands, which must be dilated or divided, their interstices and

[1] Midwifery, vol. i. p. 386.
[2] Lancet, June 23, 1828.
[3] Diseases incident to Pregnancy and Childbed.

angles giving passage to the urine, and to the touch all the characters of the fistula itself save one—a distinguishable transit through the vesical wall. Nor are these preliminary divisions always so easy as might be imagined. Frequently necessary very high up, and through a tissue tense and resisting, yet not perfectly to be governed under the knife, they offer all the dangers attending incision of the cervix for dysmenorrhœa or sterility, whether of peritonitis or pelvic abscess, and are not always so readily performed.

The position of the patient, seemingly so trifling a matter, is of the first importance. Originally it was thought best to put the patient on her back, as for lithotomy, the position recommended by Jobert, Kennedy, Hayward, Malgaigne, and almost every operator save Velpeau and Chelius, till Sims, in 1852, drew attention to its inconveniences. This surgeon, in advocating the change to the knees, has evidently fallen into an error concerning priority of the proposal. He claims that while he had chanced upon this plan in 1845, previous to the translation of either Velpeau or Chelius, its advantages had been perceived or made public by no other save themselves till after 1852. On the contrary, as early as 1840, Dr. Churchill, of Dublin, uses the following language:—

"I have found the knees and elbows far more convenient, and I think less offensive to the patient's feelings. The light can reach the part more readily, and the position of the operator is more convenient."[1]

Sims places his patients on an ordinary table, which is not found to answer every indication when an anæsthetic has been administered. Kollock has constructed a special table, with a movable stage—convenient, doubtless, in an operating theatre, but not easily carried from house to house. We have preferred in practice the following plan, suggested in all its details by a colleague, Dr. Nathan Hayward, of Roxbury. Nothing can be simpler, nothing more convenient. A common high-backed chair, or a small old-fashioned washstand, properly guarded by pillows, is placed on its face upon the bed; over its back the patient is made to bend, her arms extended and secured, her knees at a right angle strapped to the rounds or sides of the frame. She is thus immovably confined in just the posture needed, and the attendance of one or two additional assistants rendered unnecessary. To simplify the matter still more, the anæsthetic may be permanently placed under the patient's face on a cricket, or suspended there from the cross-bars of the frame, or, as in our actual practice, her nightcap may receive the sponge, and then be tied over her face.

Before operation, the fistula must have been brought into view, and room made for all necessary manipulation. Good light is necessary, best that of the sun, direct if possible, or reflected from a mirror as suggested by Sims. A careful exploratory examination must, of course, have been made, the size and position of the fistula have been accurately ascertained by engaging therein, and thus offering to the touch per vaginam, the point of a sound, or catheter, or bougie, or probe passed into the bladder by the urethra. All bridles and adhesions of the vaginal walls must have been divided by previous operation; and what none seem to have proposed or thought of, the vagina should have been dilated, unless already far more patulous than usual, to its utmost limits by huge sponge-tents—well shaped and properly placed, these will not increase the size of the fistula. The importance of another preliminary seems also to have escaped notice; by confining the patient to bed for a few days previously, as found so useful before many capital operations, and by putting her on full

[1] Diseases of Pregnancy and Childbed.

preparatory doses of ox-gall during this period, as insisted on so strongly by Clay, of Manchester, before ovariotomy, the tendency to subsequent unpleasant symptoms is greatly diminished. And finally, in those frequent cases where the urine inclines to profuse calcarious deposit, which might tend mechanically to irritate the wound, and thus, both directly and indirectly, to prevent its closure, it would be well to enforce the plan lately proposed by Kollock, and exhibit sulphuric acid internally for some days previous to the operation.

Next in importance, as in natural sequence, to the position of the patient and the access of light, is found the temporary dilatation of the vagina or repression of its walls; without thoroughly securing which, the operation can hardly be performed. A variety of modes of effecting this have been proposed; specula of various kinds, tubular, double-bladed, or resembling that for the rectum, as suggested by Montgomery; all of them affording so contracted a space for manipulation as to render it tedious, difficult, or impossible. Bent spatulæ, more or less in number, have been used, requiring the presence of several assistants.

The only instrument as yet suggested which at all answers the indication, is the admirable duck-bill speculum of Sims, as made by Otto and Kœhler, of New York, which by elevating and supporting the perineum, the patient being in proper position, thus opens the vagina to an enormous extent.

The Operation.—Cauterization of the fistula has had many advocates, both as a distinct and sufficient operation by itself, and for merely preceding suture, in place of the knife, for which last indication it cannot be too summarily condemned.

As an absolutely curative method in vesical fistulæ, the cautery has been greatly overrated. Hardly a case can be instanced where it has been perfectly successful. The fistula can easily be reduced in size by it, but seldom entirely obliterated, whether there be used Dupuytren's acid nitrate of mercury, the nitrate of silver, or the hot iron. Some experience of the two latter, and in Edinburgh of the electro-galvanic wire, as advised by Marshall and Middeldorpf, has been to us far from satisfactory.

The operations by suture have been many and diversified, all of them successively lauded, but most of them till of late have failed. Here, as in so many other operations, the simplest means have ultimately proved the best.

Each step in the process has given opportunity to surgeons for an endless succession of methods and complications. To depress the fistula, to refresh its edges, to replace protrusions of the vesical mucous membrane, the needle, to pass it, the ligature, to secure it, all have been battle grounds. The methods and instruments of Hobart, of Malagodi and Beaumont, of Schreger, Fabbri and Ehrmann, of Laugier, Lewzinsky and Colombat, of Roux, Deyber, Chassaigne, Desault and Dupuytren, down to the late ones of Mathieu and Baker Brown, bear witness only to the baffled ingenuity of those who proposed them. The serrefines brought forward last year by Bertet,[1] though so much more simple, prove as useless as the intricate leaf-clamps of Naegele and Lallemand.

Nor need more be said of the plan of Vidal de Cassis, for permanent closure of the vagina, an operation even now, perhaps, necessary in some cases where the cervix is involved, but in all others superseded and unjustifiable; nor for the same reason, of the plastic dissections of Jobert, Leroy d'Etiolles, and Velpeau, save to claim for the assertions of the former, which have gained for him such extensive reputation, their fair share of incredulity.

[1] Union Médicale, Aug., 1856, p. 375.

It is somewhat remarkable that most of the really important advances in the treatment of vesical fistulæ have been made in this country. Previous to the suggestions just alluded to, whose authors curiously enough were residents of the same place (Montgomery, Alabama), Pancoast, of Philadelphia, had secured union by dovetailing the raw edges of the fistula together; Hayward, of Boston, by so dissecting as to supersede the necessity of involving the mucous membrane of the bladder in the stitch, had insured a broad surface of adhesion and avoided a principal danger; and Mettauer, of Virginia, had substituted for other sutures, and secured them by twisting, threads of lead. To each of these gentlemen great credit is due for their several parts towards the simple and effectual operation now attained.

In January, 1852, there appeared in this *Journal* that proposal by Dr. Sims, now of New York, which for successful result will remain as it has been the greatest triumph of obstetric surgery. This operation, conceived in 1849, naturally succeeds those of Hayward and Mettauer, and in reality is based on a judicious combination of the essential points of those two methods. It consists of Hayward's stitch, down to but not perforating the mucous membrane of the bladder, made with Mettauer's metal thread, secured not by the twist, difficult of perfect adaptation and liable to become loose, but by immovable clamps to metal quills.

Perfect adaptation of the parts in most cases was thus secured, firm lateral pressure over a wide surface with less danger of laceration, and by a material unirritating and of itself offering but slight obstacles to an immediate union. It seemed probable that all had been accomplished that could be possible, if not all that might be desired, and we need not wonder at the prophecy of Mott concerning his friend, that "in all coming time he would have an enduring monument of his talent, his genius, and his philanthropy, in the gratitude of woman."

"For," as said Dr. Francis, of New York, "prior to the discovery, surgery could do nothing for this formidable class of affections. In Germany, Dieffenbach, Jaeger, Wutzer, and others, had exhausted all their resources in vain. Prolific Germany seems in this instance to have been barren. In France, Desault, Dupuytren, Lallemand, and more recently Jobert, Vidal, and their contemporaries, had been equally unsuccessful, although Jobert claims a success that has never been demonstrated, and I fear that this eminent man, like the late Lisfranc, had scarcely that devotion to practical results, which the written annals of medical science demand from all who give publicity to their cogitations and the issues of their practice. In England, their greatest men, their Coopers, their Abernethys, their Lawrences, their Guthries, could do nothing. Nor have I learned that there has emanated from that practical school of medical and surgical learning which sheds so much glory over Ireland, a single practical idea that can be truly said to have favoured this improvement; and Scotland, while she justly boasts of her Simpson, has yet to be enlightened by that great professor, ere she can add successful results of practice in these cases, to her ample list of chirurgical and obstetrical improvements. In Russia, which proffers claim to our regard for substantial and effective light on several of the obscurest subjects of the healing art, we can testify to no advancement in a knowledge of the intricacies involved in this department of female infirmity. Thus we find universally abroad, nothing but a lame and impotent conclusion to this order of experiments."[1]

There were difficulties, however, attending this operation, which Sims in part foresaw, and with an honourable candor acknowledged to exist. He says:—

"The clamps, burrowing in the vaginal surface, leave a deep sulcus on each

[1] Addresses, &c., at opening of Woman's Hospital, New York, 1856.

side of the new cicatrix, which, when they are removed too soon, fill up by granulation. It is a law of all granulating wounds to contract as they heal, and this contraction on each side of the new cicatrix is often sufficient to pull it gradually apart. Accidents of this sort have happened repeatedly in my hands, from a too early removal of the suture apparatus. Great judgment, which experience alone can give, is necessary to determine the length of time that the sutures ought to remain intact, for no positive rules can be laid down that will answer invariably in every case. I have also seen serious mischief result from leaving the clamps too long imbedded in the parts. Their burrowing and ulceration may extend entirely through the vagino-vesical structure, thereby substituting new fistulous openings for the original one. This complication is by no means incurable, but only prolongs the treatment and postpones ultimate success. In two or three instances I have witnessed a still more serious accident from an undue pressure of the clamps, viz., a strangulation of the inclosed fistulous edges, which unfortunately resulted in a sloughing of the tumefied parts, and a consequent enlarging of the opening."[1]

The experience of the profession for now five years has added to these accidents, others—

"The wires *will* cut themselves out in certain cases, however much attention may be bestowed on their introduction at a sufficient distance from the edge of the raw surface, and sufficient depth into the submucous tissue; the lips included between the clamps will slough, however much judgment may be exercised in drawing them together, and irregularities on the vaginal surface, rigidity from cicatrices, and the situation of either a part or whole of the fistulous opening, may prevent the clamps from being evenly applied, and with sufficient parallelism to secure their regular and efficient action. In consequence of these occurrences the patient has to be subjected to a greater or less number of repetitions of the operation; and, perhaps, other means have to be employed for the perfection of the cure."[2]

Collis, of Dublin, and Spencer Wells, of London, have endeavoured to overcome these disadvantages by methods published during the past winter.

The first consists of Sims' operation with this modification, that both edges of the fistula are deeply split, these fissures separated and secured by India rubber quills, face to face.[3] The second substituted a pin, armed with shot and perforated bars, for the silver wire.[4] These plans, however, had been anticipated by one infinitely better.

It is to Dr. Bozeman, of Alabama, to whom it accidentally suggested itself, that we are indebted for the long looked for discovery, now known as the button suture. His first paper was published in the spring of 1856, and he has lately made known the results of a more extended experience, by diagrams, accurate descriptions, an elaborate classification of all possible varieties of fistula, and directions for perfectly adapting his apparatus to each and every one of them.

The early stages of his operation are identical with those already described. Silver ligatures are used, but are introduced directly and without the aid of any other thread. Instead of being fastened to metal quills, the extremities of the wires, brought together like Mettauer's before twisting, are passed through minute perforations in a shield of lead, which is found to answer much better than the silver at first proposed, and, as by Sims, clamped securely with shot.

It is claimed that the metal shield will—better than Sims' cross-bars—

[1] This Journal, January, 1852, p. 70.
[2] Kollock, work under review, p. 17.
[3] Dublin Quarterly Journal, Feb., 1857, p. 122.
[4] Med. Times and Gazette, Feb., 1857, p. 141.

1. Act the part of a splint in keeping the approximated edges in close contact, and at rest;

2. Prevent the wires from cutting out; and

3. Protect the edges of the wound against irritation by the urine, vaginal discharges, or atmosphere.

The button suture has now been fairly tried. Successful cases have been reported, besides the fifteen or more of Bozeman, in this country, by Gaston, T. Wood, Kollock, Williams, and others; and in Great Britain, by Spencer Wells and Baker Brown; all of whom corroborate its excellence. Kollock's report, indeed, prepared evidently with care and well and candidly written, is mainly occupied by cases from his own practice, showing the relative merits of the clamp and button.

Dr. Bozeman has found that the more difficult cases of ordinary fistula can be easily cured, but there are two lesions he has mastered which have hitherto been entirely beyond surgical aid.

The first of these is a longitudinal laceration of the edge of the meatus, "the most unfavourable form of all the urethral injuries," for which no treatment had ever even been proposed.

The other victory alluded to is in those cases where the cervix uteri is directly involved in the fistula. Nothing had here been done unless by Vidal's method of closing the vagina, save by Jobert; who, until lately, by extensively dissecting away the attachments of the cervix, whether or not accompanying this by the insertion of a flap from a distant part, managed to close the fistula, but lost his patients by peritonitis.

Bozeman, on the other hand, claims better fortune. By his method the uterus itself is dragged down, the edges of the cervix are pared, just as with any part of the vesico-vaginal septum, and stitches inserted into its substance.

The idea of this bold procedure, as novel as it is successful, had undoubtedly presented itself in part to the mind of Velpeau,[1] who speaks of the possibility of dragging down the cervix and making it subservient to closing the fistula, but remarks: "All these suggestions want a foundation to rest upon; none of them can yet adduce any success in their favour;" and Jobert, improving upon himself, relates at the close of the last year a case in which sutures were passed through the cervix;[2] but the credit of having independently conceived the operation in all its completeness, and of having put it into actual practice, is undoubtedly Bozeman's.

The results obtained add only another to the many proofs that the cervix, and, indeed, uterus itself, can bear immensely more manipulation with impunity than is generally supposed.

After-Treatment.—The operation being completed, the great essentials for its success are perfect rest of body (best upon one side) and of mind, a complete stagnation obtainable by opium, of one class of excretions, the intestinal, and a perfectly unimpeded passage of those from the bladder.

In all cases, almost without exception, Sims' catheter, self-retaining by its double curve, is invaluable. When fitting well, of course an essential, it is found to answer every indication. In those obstinate lacerations of the meatus already referred to, this instrument cannot be borne; but, by an ingenious arrangement of his button shield, Bozeman has compelled it, though designed for an entirely different purpose, successfully to take the place by affording the necessary support to a male elastic.

[1] Operative Surgery, vol. i. p. 627.

[2] Union Médicale, Nov., 1856.

The button suture is still in its infancy. It will, undoubtedly, be found useful for other lesions than vesical fistula. We have, indeed, used it already for such, and shall elsewhere report a successful case.

The preceding remarks will have given some idea of "the difficulties," to use Sims' words of his own early experience, "that had to be overcome, the many disappointments that had to be borne before ultimate success; which, as it will be seen, was the work not of a day, and the result not of accident, but of long, laborious, and persevering application."

Almost every variety of vesical fistula in the female seems now to have been brought within the reach and control of art except those invading the cavity of the uterus, and the unique form reported by Simpson as a sequence to pelvic abscess, a fistula between the bladder and rectum without in the least implicating either uterine or vaginal canal.[1] The first class of these cases may yet possibly be made curable after free dilatation of the cervix uteri by carefully placed sponge-tents; but the latter, it would seem, must ever remain beyond hope.

Of other vaginal fistulæ, also the results, most of them, of pelvic abscess, and unconnected in any way with urethra or bladder, we can here say nothing. They form in their relations and treatment a most interesting group among the diseases of women, but their history has yet to be written.

H. R. S.

ART. XIII.—*Adulterations Detected; or Plain Instructions given for the Discovery of Frauds in Food and Medicine.* By ARTHUR HILL HASSALL, M. D. London, 1857.

On the Composition of Food, and how it is Adulterated; with Practical Directions for its Analysis. By W. MARCET, M. D., F. C. S. London, 1856.

THE subject of the adulteration of drugs was first brought before the notice of the American Medical Association at at its annual meeting at Baltimore in 1848. A communication was then read by Dr. T. O. Edwards, at that time member of Congress from Ohio, in which an exposure was made of the great prevalence of adulteration in imported drugs, and of the evils necessarily resulting from it. The Association at that time presented to Congress a memorial on the subject, recommending prompt legislation; and a bill was accordingly passed, the same year, providing for the appointment of drug inspectors in all the principal ports of entry, whose duty it should be to examine critically all medicinal articles imported into the country, and refuse admission to such as were adulterated or in any way deficient in quality. These inspectorships have been continued from that time to the present.

The exposures which were made, at the period referred to, of the worthless character of many imported drugs, attracted immediately the attention of the profession, and will no doubt be fresh in the minds of many of our readers. The discovery that they had been for some years employing in practice opium from which the morphia had been wholly or in part extracted, or scammony which consisted of scammony, flour, gamboge, and chalk, equal parts, was naturally calculated to excite a lively interest in the minds of practical physicians. It was very evident that some check to this wholesale and injurious adulteration

[1] Edinburgh Monthly Journ. of Med. Sciences, Dec., 1852; Obstetric works.